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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,449	02/07/2002	Lukas Novotny	176/60921 (2-11150-912)	9533
7590 12/28/2004				
Gunnar G. Leinberg, Esq. NIXON PEABODY LLP Clinton Square P.O. Box 31051 Rochester, NY 14603-1051		EXAMINER STAHL, MICHAEL J		
		ART UNIT 2874 PAPER NUMBER		
DATE MAILED: 12/28/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

AL

**Office Action Summary**

Application No.

10/068,449

Applicant(s)

NOVOTNY ET AL.

Examiner

Mike Stahl

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2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 14-21, 27-30, 36-39, 45, 46, 48-50 and 52 is/are rejected.
- 7) ☒ Claim(s) 9-13, 22-26, 31-35, 40-45, 47 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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This Office action is in response to the amendment filed October 1 2004. Claims 1-52 remain under consideration.

### ***Claim Objections***

Amended claim 45 is objected to because it recites that the structure focuses a portion of the light incident thereon onto a portion of the elliptical shaped mirror (lines 7-8). The structure does not actually focus light onto the elliptical mirror but merely directs it there (see fig. 3). It is suggested that “focusing” be replaced with “directing” in line 7 of claim 45. This would be similar to the language in claim 49 lines 5-6.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 14-21, 27-30, and 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueyanagi (US 2001/0009541).

Claim 1: Ueyanagi discloses a system (figs. 1 or 6) comprising: an optical element 6; at least one structure 8 at least partially in a non-opaque portion of the optical element and at least

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adjacent a surface of the optical element; and a source 2 of light with a mode profile that provides an electric field which has a vector component substantially perpendicular to the surface of the optical element, the source positioned to propagate at least a portion of the light through the optical element onto an object 12, the structure 8 enhancing the electric field of the light which optically interacts with the object. See e.g. [0042], [0044], [0055], and [0059]-[0063].

Claim 2: The system includes a guiding system for moving the optical element (which is part of an optical head 1) as shown in fig. 15.

Claim 3: The system includes a focusing lens 5 positioned to focus the light from the source onto the optical element.

Claim 4: The optical element 6 is a solid immersion lens (SIL) as noted in [0044].

Claim 5: The optical element 6 may be regarded as an optical waveguide in that it has a refractive index higher than that of the surrounding medium, and in that it guides the beam from the source 2 toward the structure 8.

Claim 6: The structure 8 is elongated and has at least one tip.

Claim 7: The structure 8 protrudes out past the surface of the optical element 6 by approximately 40 nm, given that the depth of the etched groove 6f in fig. 2B is 10 nm and the thickness of the Ti film 71 deposited over it in fig. 2C is 50 nm. See [0064].

Claim 8: The structure 8 may be coated with an antireflection film ([0072]).

Claims 14-21: These claims are satisfied by the process of producing the Ueyanagi system described above with regard to claims 1-8.

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Claims 27-30 and 36-39: The lens 6 of the Ueyanagi system described above with regard to claims 1 and 6-8 satisfies claims 27-30, and the process of making it satisfies claims 36-39 (see figs. 2A-2D).

Claims 45-46, 48-50, and 52 are rejected under 35 U.S.C. 102(a) as being anticipated by Bernacki et al. (US 6036324).

Claim 45: Bernacki discloses a system comprising: an elliptical shaped mirror 14; at least one structure 20 positioned to optically interact with the elliptical shaped mirror; and a source 38 of light with a mode profile that provides an electric field which has a vector component substantially perpendicular to a surface of the elliptical shaped mirror, the structure 20 directing at least a portion of the light onto at least a portion of the elliptical shaped mirror 14, the elliptical shaped mirror 14 focusing the portion of light onto another portion 22 of the structure 20 enhancing the electric field of the light which optically interacts with an adjacent object 26. See fig. 1. The mirror 14 is regarded as having an elliptical shape since it is a spherical mirror and a sphere is a subclass of an ellipsoid.

Claim 46: The system includes a guiding system that moves the elliptical shaped mirror 14 (col. 3 lns. 57-62).

Claim 48: The structure 20 is elongated and has at least one tip.

Claims 49, 50, and 52: These claims are satisfied by the process of making and using the Bernacki system described above with regard to claims 45, 46, and 48.

***Response to Amendment***

The rejections under Mamin et al. (US 6055220) and Garman (US 4955685) have been withdrawn in view of the limitations added to the respective independent claims. Mamin does not show the structure being in a non-opaque portion of the optical element as required by claims 1, 14, 27, or 36, nor does it show an elliptical mirror as required by claims 45 and 49. Garman does not teach that the structure directs light to the elliptical mirror as further required by claims 45 and 49.

***Allowable Subject Matter***

Claims 9-13, 22-26, 31-35, 40-44, 47, and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if claim 47 is suitably amended to avoid being subject to the same objection as claim 45 above.

Claims 9, 22, 31, and 40 each require that the optical element includes an optical base and an optical layer connected to the base, and that the structure is at least partially in and at least adjacent to a surface of the optical layer. Ueyanagi is the only reference applied to their respective base claims, but the optical element 6 in Ueyanagi clearly does not have the recited optical base and optical layer structure. Ueyanagi teaches that the structure 8 can be formed in or on a surface of the optical element 6 directly. It would not have been obvious to modify Ueyanagi by forming the structure in a separate optical layer and connecting the layer to an optical base, since this would have involved more parts and more process steps than were

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necessary. Claims 10-13, 23-26, 32-35, and 41-44 depend from respective ones of claims 9, 22, 31, or 40.

As to claims 47 and 51, Bernacki et al. is the only reference applied to base claims 45 and 49. The elliptical shaped mirror **14** of Bernacki is a single, relatively small (6 inch diameter), commercially available mirror (col. 4 lns. 21-23; col. 5 lns. 4-8; col. 6 lns. 33-35). As such, there is no apparent motivation to modify the Bernacki system by using more than one elliptical shaped mirror to form the mirror **14**. None of the other references of record teach or suggest using a pair of elliptical shaped mirrors in combination with the system of claim 45 or with the method of claim 49.

### ***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

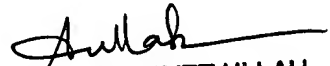
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The additional references cited on the attached PTO-892 form are considered relevant to this application.

Any inquiry concerning this communication should be directed to Mike Stahl at (571) 272-2360. Official communications which are eligible for submission by facsimile and which pertain to this application may be faxed to (703) 872-9306. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at (571) 272-1626.

MJS

Michael J. Stahl  
Patent Examiner  
Art Unit 2874

  
AKM ENAYET ULLAH  
PRIMARY EXAMINER

December 23, 2004